

Notice of Allowability

Application No.

10/827,327

Examiner

Jarreas C. Underwood

Applicant(s)

YAMADA ET AL.

Art Unit

2877

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 4/20/2004.
2. ☒ The allowed claim(s) is/are 1-16.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 20060825 5/27/04
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____.
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

DETAILED ACTION

Allowable Subject Matter

1. Claims 1-16 are allowed.

The following is an examiner's statement of reasons for allowance:

2. As to claim 1, the prior art of record, taken alone or in combination, fails to disclose or render obvious an interface structure comprising a surface plasmon waveguide formed of a dielectric, said interface structure sandwiched between negative dielectrics and adapted to be positioned over a substrate.
3. As to claim 6, the prior art of record, taken alone or in combination, fails to disclose or render obvious a method for detecting a position of a substrate, comprising an interface structure which functions as a waveguide of surface plasmon and in which a dielectric is sandwiched between negative dielectrics; and detecting the positional relationship between the interface structure and an object on the substrate to be detected by passing excitation light through the interface structure to generate localized plasmon at an outlet of the interface structure, and detecting fluctuations of the localized plasmon due to the presence of the object to be detected.
4. As to claim 7, the prior art of record, taken alone or in combination, fails to disclose or render obvious an alignment apparatus comprising an interface structure comprising a surface plasmon waveguide formed of a dielectric, said interface structure sandwiched between negative dielectrics; and a substrate with a microstructure on a surface therein positioned below said interface structure, wherein plasmon intensity with respect to the microstructure on the surface is detected by the interface structure, and

the positional relationship between the interface structure and the microstructure is thereby detected.

5. As to claim 16, the prior art of record, taken alone or in combination, fails to disclose or render obvious a method for alignment, comprising the steps of: detecting the positional relationship between the interface structure and an object on a substrate to be detected by passing excitation light through the interface structure to generate localized plasmon at an outlet of the interface structure and detecting fluctuations of the localized plasmon due to the presence of the object to be detected; and controlling the positions of the interface structure and the object to be detected based on the detected positional relationship.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

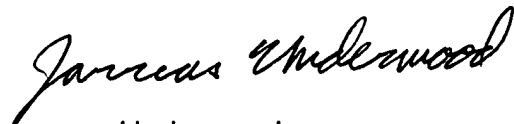
Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Jannson et al (United States Patent 5,067,788); Foster (United States Patent 5,485,277); Groger et al (United States Patent 5,606,633); Pedersen et al (United States Patent Application Publication 2002/0044285); Sasaki (United States Patent 6,753,188); Sato (United States Patent Application Publication 2005/0046853); Kimura (United States Patent Application Publication 2006/0017931); Berini et al (United States Patent 7,043,134).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jarreas C. Underwood whose telephone number is (575) 272-1536. The examiner can normally be reached on Monday-Friday 0630-1500.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley can be reached on (571) 272-2059. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Jarreas Underwood
Patent Examiner
Art Unit 2877
8/25/2006

LAYLA G. LAUCHMAN
PRIMARY EXAMINER
